

2021

Annual

Report



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## The 2021 California Pesticide Residue Monitoring Program Report

The Department of Pesticide Regulation's (DPR) California Pesticide Residue Monitoring Program (CPRMP) samples and tests for pesticide residues in domestically grown and imported fresh produce. The CPRMP enforces pesticide residue tolerances set by the U.S. Environmental Protection Agency (U.S. EPA). A tolerance is the maximum amount of a specific pesticide allowed on human or animal food in the United States. The Code of Federal Regulations, Chapter 40, Part 180, lists tolerances and dictates how to analyze raw agricultural commodities for pesticide residues. U.S. EPA establishes tolerances based on the pesticide toxicity, how much and how often the pesticide is applied, and how much of the pesticide remains in or on the commodity. DPR has the authority to levy civil penalties against anyone who packs, ships, or sells produce with illegal pesticide residues.

CPRMP staff sample a wide range of fruits and vegetables collected at sites where produce is sold, packed, or distributed. DPR's sampling program is designed to meet the goal of preventing "public exposure to illegal pesticide residues" (Food and Agricultural Code 12532) and focuses on the following high-risk commodities:

- Produce commonly eaten by infants and children.
- Produce treated with pesticides listed under Proposition 65 as carcinogens or reproductive toxins.
- Produce reflective of consumption patterns among different ethnic and socioeconomic groups.
- Produce which has a history of detected illegal pesticide residues.
- Produce originating from countries with a history of detected illegal pesticide residues.

As a result of collecting samples based on the factors noted above, results are biased towards collecting produce more likely to have pesticide residues than if commodities were randomly sampled. In addition, the number of samples of a given commodity may not be large enough to generalize about the pesticide residue levels for the entire volume of that commodity in trade. This means that the overall rates of residue levels for a particular pesticide, commodity, or place of origin are not statistically representative of residue rates as a whole.

DPR contracts with the California Department of Food and Agriculture's (CDFA) Center for Analytical Chemistry laboratories to conduct pesticide residue analyses for the monitoring program. Their ISO 17025 accredited laboratories analyze samples for over 500

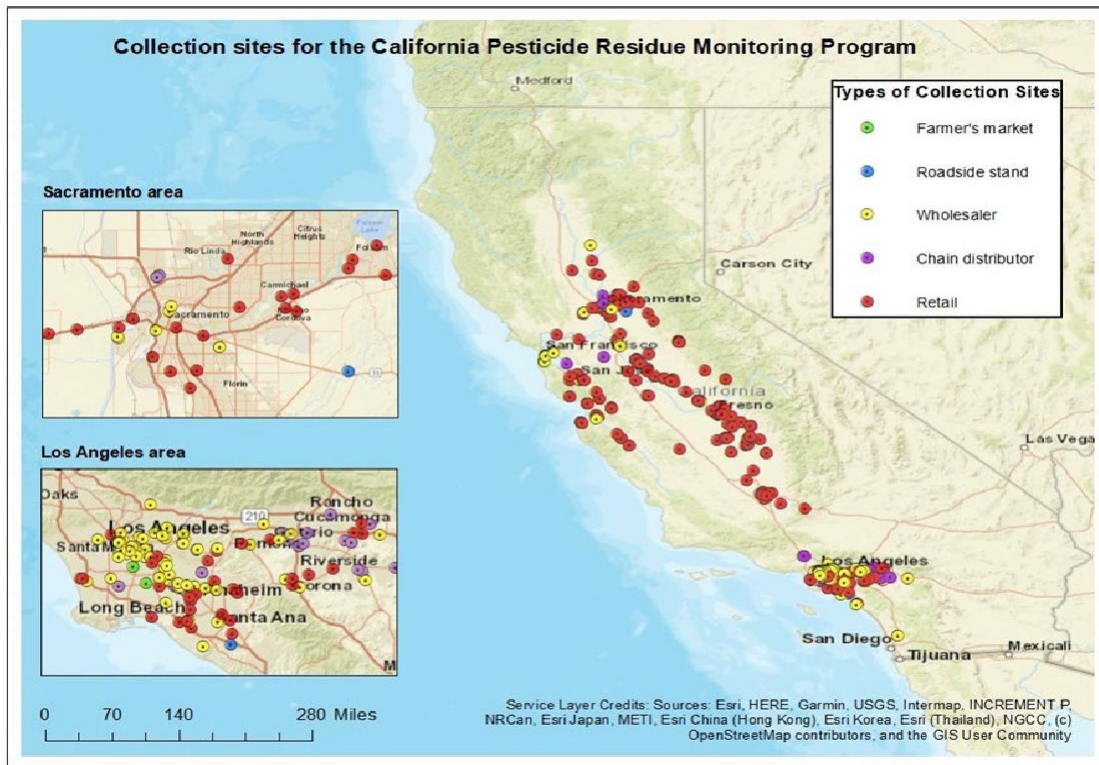
pesticides and pesticide breakdown products. ISO/IEC 17025 accreditation is the standard for testing and calibration laboratories worldwide.

If illegal residues are found, DPR immediately removes the illegal produce from the channels of trade. In addition, if the owner of the commodity has additional produce from the same source, DPR quarantines those lots until subsequent laboratory testing determines they are free from illegal residues. Further, DPR traces the distribution of the illegal produce by contacting distributors and vendors throughout California, imposing quarantines, and conducting additional sampling and testing.

### 2021 Pesticide Residue Monitoring Sampling Results

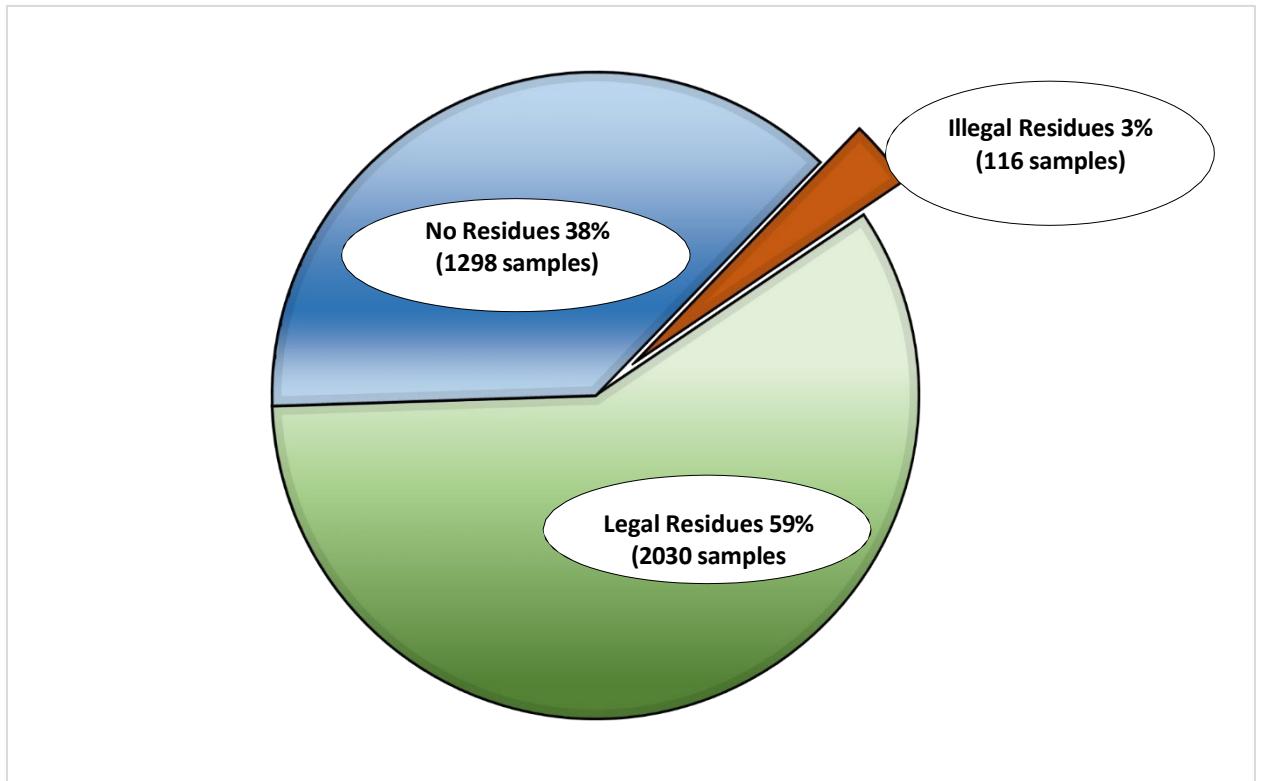
CPRMP staff collected 3,444 produce samples from approximately 500 different businesses in 2021 (Figure 1). These include wholesale and retail outlets, terminal markets, distribution centers, and roadside and farmers markets. Ninety-seven percent of the produce samples collected by DPR had either no detectable pesticide residues or legal residue levels below the applicable U.S. EPA tolerance (Figure 2).

Figure 1. Map of sample collection sites in 2021.



Illegal pesticide residues were found in 116 samples (3% of samples, see Appendix 1 for the table of all illegal samples). Most illegal samples (99, 85%) had residues of pesticides with no established federal tolerance (NTE), meaning any detected residue level was illegal.

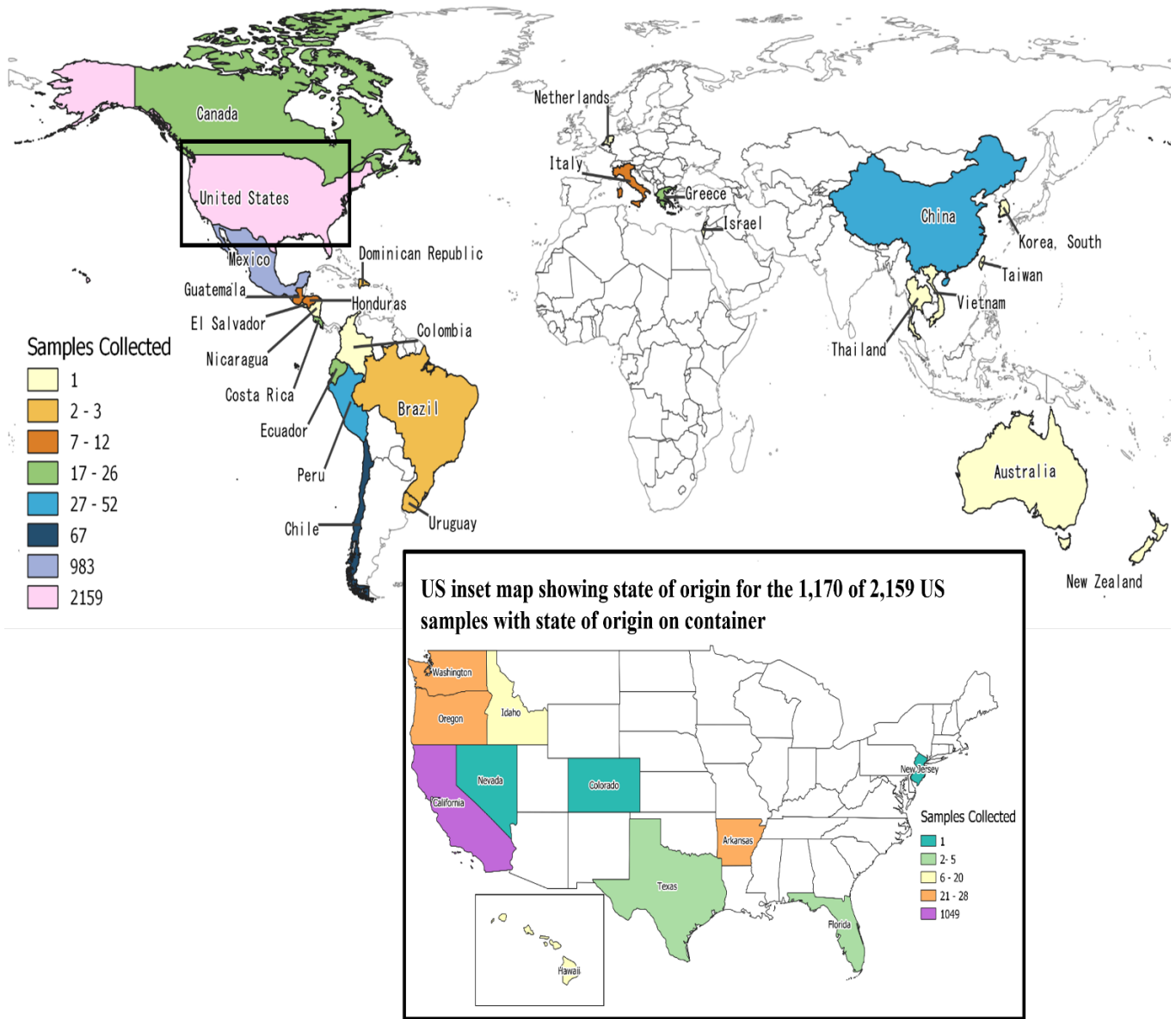
*Figure 2. Percentage of produce samples with no residues, legal residues, or illegal residues detected in 2021.*



### Country of Origin

Over two-thirds of the samples collected in 2021, or 2,159 samples (62.7%), were grown domestically, while 1,263 samples (36.7%) of the samples were imported (Figure 3). The remaining 22 samples (0.6%) were of undetermined origin due to a lack of information on the containers.

Figure 3. Map of origins of produce sampled in 2021.



Illegal residues were detected on 27 of the domestic samples (1.3%) and 89 of the imported samples (7.1%, Figure 4). This over 5-fold difference between domestic and imported violation rates is consistent with sampling over the past ten years where domestic violation rates ranged from 1.3%-2.6% and imported violation rates ranged from 7%-14.6% (Figure 5). In 2021, illegal residues were found on commodities originating from ten different countries (Table 1). California specific sample results are described separately below.

Figure 4. Summary of domestic versus imported sample residue testing results in 2021.

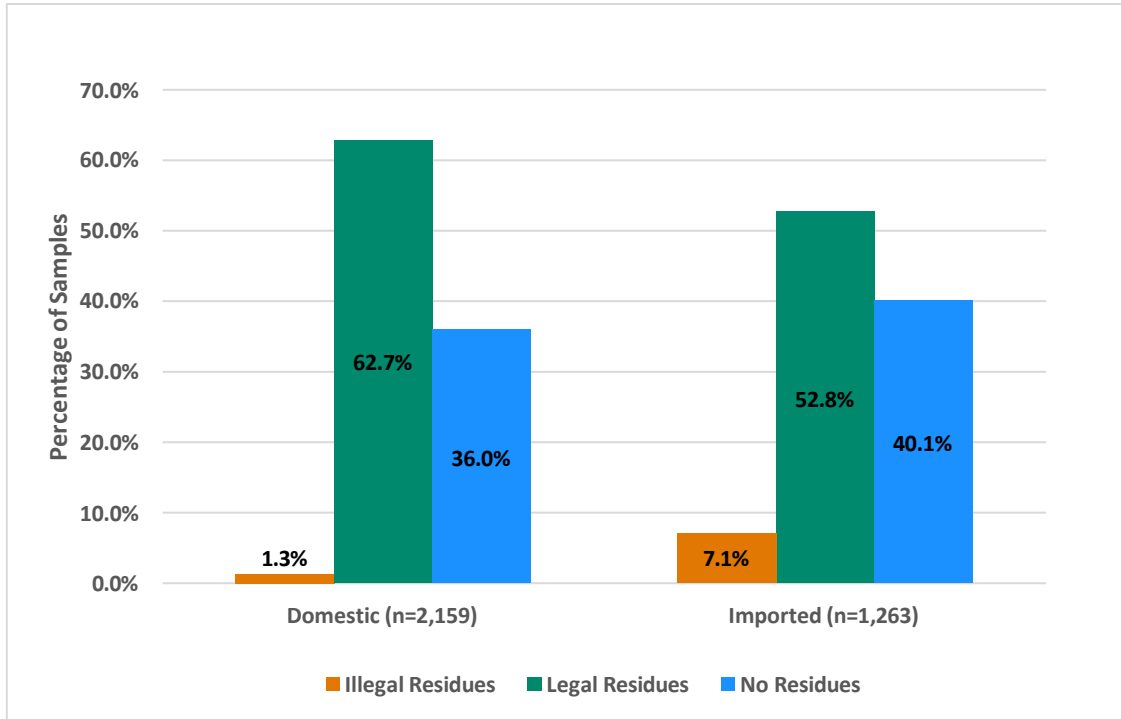
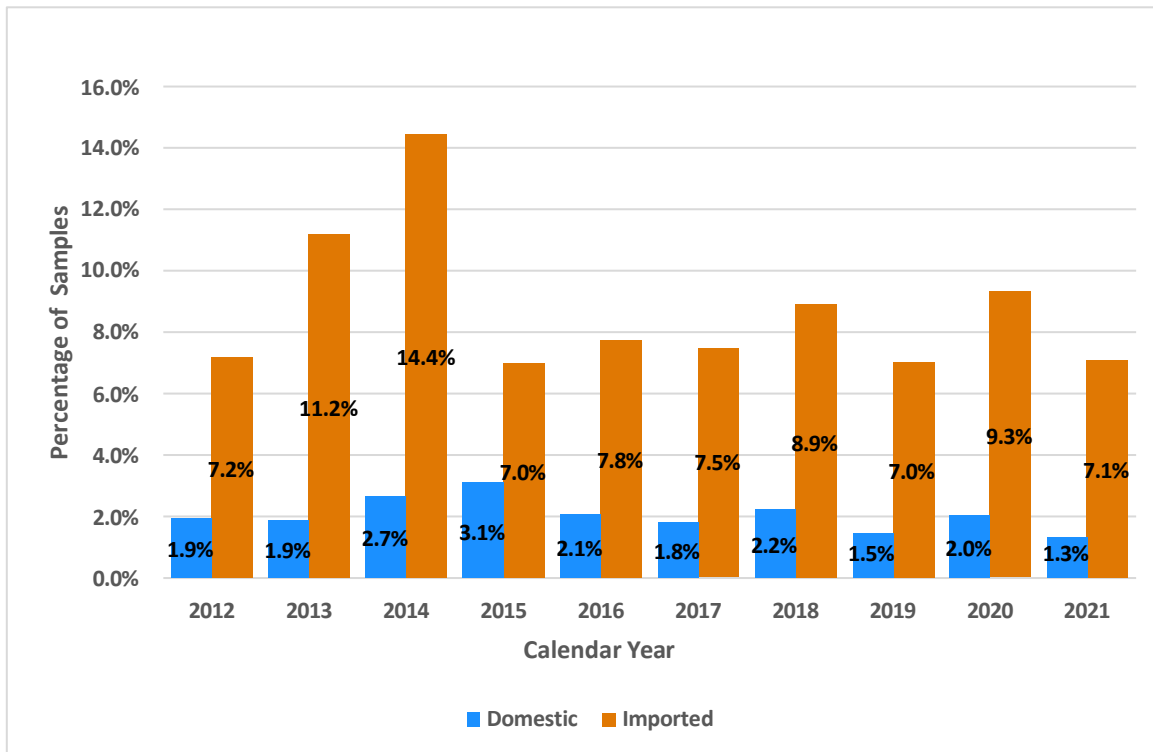


Figure 5. Summary of rates of illegal residues on domestic and imported samples, 2012-2021.



*Table 1. Illegal produce samples collected in 2021, by country of origin.*

<b>Country of origin</b>	<b>Number illegal</b>	<b>Total collected</b>	<b>Percent illegal</b>
Chile	1	67	1%
China	5	30	17%
Costa Rica	3	26	12%
Dominican Republic	1	2	--
Ecuador	4	19	21%
Greece	3	17	18%
Guatemala	1	12	8%
Mexico	68	983	7%
Peru	3	52	6%
United States	27	2159	1%

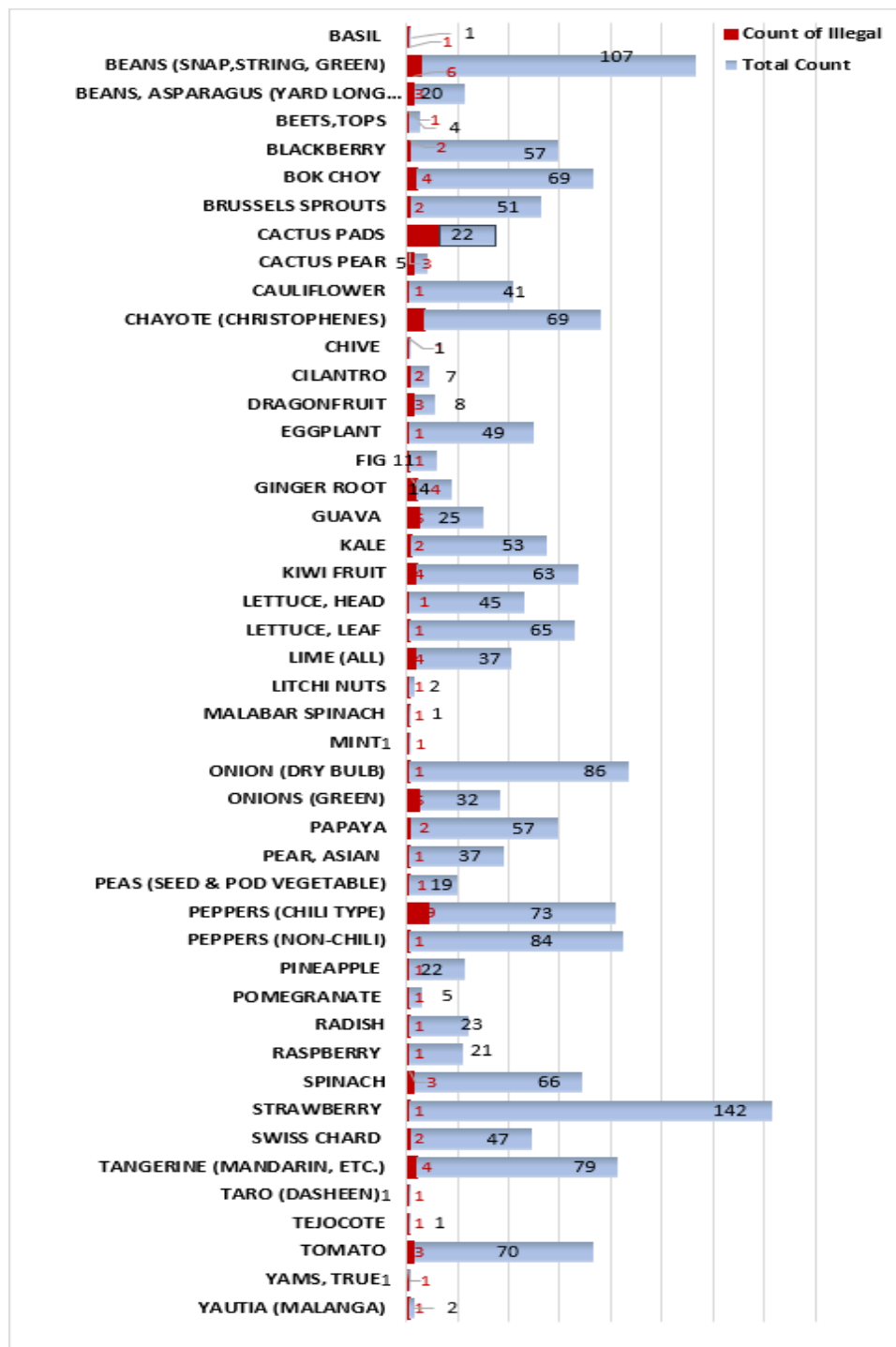
-- percentages not calculated for samples sizes <10.



## Commodity Results

In 2021, the program sampled 132 different types of fresh fruits and vegetables (see Appendix 2 for the list of all sampled commodities). Illegal residues were found in 46 different commodities (Figure 6).

Figure 6. Commodities with illegal residue in 2021.

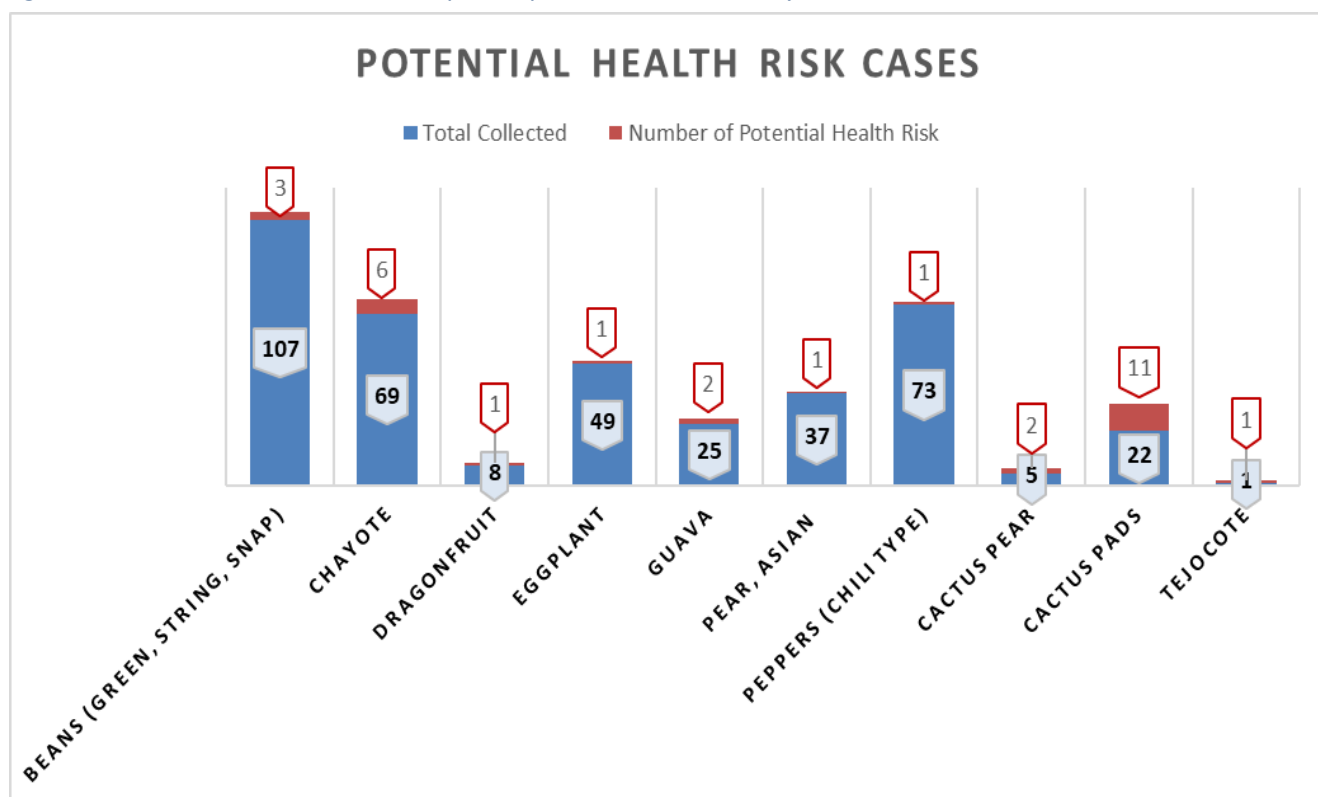


## Dietary Risk Assessments

DPR's Human Health Assessment Branch (HHA) reviews the toxicity for each illegal pesticide residue. A dietary risk assessment is conducted to determine whether the residues pose a potential acute health risk to consumers. Assessments are based on consumption rates for the produce and acute reference doses for that pesticide or combination of pesticides. A human health risk is determined by evaluating the level of residue in the produce if eaten at the maximum rate (mg/kg in a day) based on daily consumption data. If HHA determines the produce may pose a potential health risk to consumers, DPR notifies and collaborates with the California Department of Public Health and the U.S. Food and Drug Administration to remove it from the channels of trade.

In 2021, HHA determined 29 samples (10 different commodities), were potential health risks to consumers (Figure 6). In all 29 samples, the potential health risks were due to illegal residues of organophosphates or carbamates (see Appendix 4).

Figure 7. Commodities determined to pose a potential acute dietary health risk.



## California Grown Sample Results

California grown produce samples (1049 samples) accounted for more than 30% of total samples tested and almost 50% of all domestic grown samples. This count likely under-represents the true number of California grown produce collected, as sampled commodities labeled only with “product of US” are potentially grown in California. For illegal residue samples, DPR does a trace back investigation to determine the source of the produce. However, for legal residue samples, DPR does not do a trace back investigation and is unable to determine, based on labeling alone, the state of origin for produce labeled “product of US”.

Over 98% of the samples labeled as grown in California had legal or no residues detected on them. Of the 1,049 California samples tested, only 2% of the samples had illegal residues (22 samples, Table 2). Ventura County Agricultural Commissioner (VCAC) investigated an illegal residue of dicloran on a sample of kale. VCAC determined the pest control operator (PCO) violated 3CCR, section 6614 (a) and (b)(2) and concluded the PCO did not adequately evaluate the equipment to be used, meteorological conditions, the property to be treated, and surrounding properties to determine the likelihood of harm or damage. The PCO was fined \$1,200. Of the remaining California investigations, enforcement actions are either still ongoing or counties were unable to determine the residue sources.

*Table 2. Commodities grown in California with illegal pesticide residues detected in 2021.*

Commodity	Illegal Samples	County Grown	Pesticide(s) Detected
Beet Tops	1	Santa Barbara	DCPA
Bok Choy	2	Kern, Riverside	Lambda-Cyhalothrin
Brussels Sprouts	1	Monterey	Propamocarb
Cilantro	1	Ventura	DDE
Eggplant	1	Fresno	Methomyl
Kale	1	Monterey	Linuron
Kale	1	Ventura	Dicloran
Lettuce, Head	1	Monterey	Metrafenone
Lettuce, Leaf	1	Monterey	Acephate, Methamidophos
Malabar Spinach	1	Santa Clara	DCPA
Onion (Dry Bulb)	1	Imperial	Captan
Peppers (Non-Chili)	1	Tulare	Etoazole
Pomegranate	1	Kings	Cypermethrin
Spinach	3	Los Angeles Santa Barbara San Benito	Prometryn Tetraconazole DCPA
Strawberry	1	Monterey	Imazalil
Swiss Chard	2	Stanislaus, Ventura	DCPA
Tangerine (Mandarin, Satsuma, Etc.)	1	Tulare	Indaziflam
Tomato	1	Orange	Captan

## Organic Sample Results

As a part of its residue monitoring program, DPR also tests organic produce. Pesticide residues may be legally found on organic produce. The U.S. Department of Agriculture (USDA) allows [certain pesticides](#) for use in organic farming. In addition, due to inadvertent or unavoidable contact in the environment, USDA organics regulations allow for certified organic produce to have residues of no more than 5% of the U.S. EPA tolerances for conventionally grown commodities ([Code of Federal Regulations, Title 7, Part 205.671](#)).

The CPRMP may collect organic produce during routine sampling and shares testing results with CDFA's CA State Organic Program which regulates organic operations in the state. All organic samples with detected pesticides are referred to CA State Organic Program for follow up investigation and potential enforcement. In cases where an organic sample has pesticide residue levels above the U.S. EPA tolerance for conventionally grown commodities DPR will also follow-up and investigate the illegal sample.

In 2021, the CPRMP collected 250 organic samples. These samples represented 60 commodities from eight countries. Seventy-six percent of the organic labelled samples tested (190) were of domestic origin 24% of the samples (59) were imported, and the origin of one organic sample was undetermined. Of the 250 organic samples collected, 42 samples had pesticide residues (Table 3). One bell pepper sample, grown in California, had an illegal etoxazole pesticide residue that exceeded the conventional tolerance. More information about the enforcement of the State Organic Program is available at their [website](#).

*Table 3. Pesticides detected on organic commodities sampled in 2021. Asterisks (\*) denote the pesticide residues that exceeded the federal conventional tolerance threshold for the commodity and were considered illegal under the CPRMP.*

Pesticide	Commodity	Number Of Samples
<b>Azoxystrobin</b>	Blueberry	1
	Lemon	1
<b>Bifenthrin</b>	Peppers (Non-Chili)	1
<b>Boscalid</b>	Kale	1
	Swiss Chard (Spinach Beet)	1
<b>Buprofezin</b>	Nectarine	1
<b>Captan</b>	Blueberry	2
<b>Chlorpropham</b>	Potato (White, Irish, Red, Russet)	2
<b>Chlorthal-Dimethyl</b>	Kale	1
<b>Cypermethrin</b>	Beans (Green, String, Snap)	1

<b>DDE</b>	Kale	2
	Spinach	1
<b>Etoxazole*</b>	Peppers (Non-Chili)	1
<b>Fenhexamid</b>	Blueberry	1
<b>Fenpropathrin</b>	Grapefruit	1
<b>Fludioxonil</b>	Peach	2
<b>Fluopicolide</b>	Peppers (Non-Chili)	1
<b>Fluopyram</b>	Cucumber (All)	1
	Peppers (Non-Chili)	1
<b>Flupyradifurone</b>	Cucumber (All)	1
<b>Flutriafol</b>	Peppers (Non-Chili)	1
<b>Imazalil</b>	Lemon	1
	Oranges	1
	Tangerine (Mandarin, Satsuma, Murcott, Etc.)	1
<b>Imidacloprid</b>	Eggplant	1
	Lime (All)	1
<b>Oxamyl</b>	Squash (Summer)	1
<b>Propamocarb</b>	Cucumber (All)	1
<b>Pyraclostrobin</b>	Lime (All)	1
	Peppers (Non-Chili)	1
<b>Pyrimethanil</b>	Strawberry	1
<b>Spinosad</b>	Blackberry	4
	Blueberry	1
	Grapes	1
	Kale	2
	Nectarine	1
	Pear	1
	Raspberry	2
	Strawberry	2
	Tomato	2
<b>Thiabendazole</b>	Lemon	1
	Oranges	1
	Pear	1
	Tangerine (Mandarin, Satsuma, Murcott, Etc.)	1

## DPR Enforcement on Illegal Pesticide Residues

When illegal pesticide residues are detected, DPR quarantines the produce containing the illegal residues. The owner of the quarantined produce has the option to securely dispose of the produce on site, recondition the produce or dispose of it for byproducts purposes as long as the byproducts can lawfully contain the pesticide residue found. Reconditioning can include washing, peeling, or waiting for the pesticide residue to breakdown to acceptable tolerance levels or eliminated entirely if the illegal residue(s) has no established tolerance.

After reconditioning, the owner must pay for the sample to be reanalyzed at a private laboratory. If test results show the pesticide residue below the legal tolerance, DPR may allow the sale of the produce. If not, the produce cannot be sold and remains under quarantine until final disposition.

DPR investigators trace the movement of the produce with illegal residues by contacting distributors, retailers, and wholesalers throughout California. DPR quarantines any additional remaining cases of produce found with illegal pesticide residues. During 2021 trace back enforcement investigations, DPR quarantined commodities from seventy-two vendors and issued 120 quarantine notices, disposing of over 70,000 pounds of contaminated produce.

DPR provides compliance guidance to repeat offenders to reduce the flow of produce with illegal residues into California. DPR places companies in its Repeat Residue Offender Program (RRO) if they are identified three or more times as the first point of sale in California of

produce with illegal residues. Additionally, DPR may place a company in the RRO program when it identifies the company as the first point of sale of produce containing illegal residues that pose a potential acute health risk to consumers.

The RRO program includes a compliance assistance interview with the company. During these compliance assistance interviews, DPR staff review the illegal residue cases with company representatives and identify steps the company should take to prevent the future sale of produce with illegal pesticide residues. The company is given three months to implement the changes, after which the company is placed on probation for twelve months. Any company that is found to violate their probationary period is subject to enforcement actions. DPR has the authority to levy civil penalties against anyone who packs, ships, or sells produce with illegal pesticide residues. Information on penalty actions can be found on [DPR's Produce with Illegal Pesticide Residue Fines and Settlements](#) webpage.

If it is determined that the produce with illegal pesticide residues was grown in California, the

County Agricultural Commissioner (CAC) in the county where the produce was grown will investigate to determine the source of contamination. Frequently, DPR scientists assist CAC staff with this investigation. CACs have authority to levy civil penalties for illegal use of pesticides.

All 2021 CPRMP produce sampling results, as well as previous years' data and reports, are available for download on [DPR's Residue Monitoring Program](#) website.

Appendix 1. 2021 CPRMP commodity samples containing illegal pesticide residues.

Origin	Pesticide	Commodity	Laboratory Number	Residue Amount	Tolerance
Chile	Pyrimethanil	Kiwi Fruit	A21M00685	0.085	NTE
China	Clothianidin	Ginger Root	A21M00448	0.44	0.3
China	Fosthiazate	Ginger Root	A21M00514	0.026	NTE
China	Fosthiazate	Ginger Root	A21M00649	0.01	NTE
China	Fosthiazate	Ginger Root	A21M00974	0.014	NTE
China	Phorate	Pear, Asian	A21M01389	0.055	NTE
Costa Rica	Carbendazim	Yams, True	R21M00262	0.83	NTE
Costa Rica	Diflubenzuron	Pineapple	R21M00389	0.011	NTE
Costa Rica	Thiabendazole	Taro (Dasheen)	A21M00992	5.4	NTE
Dominican Republic	Fipronil	Peppers (Chili Type)	A21M01356	0.044	NTE
Ecuador	Acephate	Dragonfruit	A21M00546	0.068	0.02
Ecuador	Carbendazim	Yautia (Malanga)	R21M00479	0.84	NTE
Ecuador	Carbofuran	Dragonfruit	A21M00546	0.013	NTE
Ecuador	Dimethoate	Dragonfruit	A21M00546	0.01	NTE
Ecuador	Methamidophos	Dragonfruit	A21M00546	0.024	NTE
Ecuador	Profenofos	Dragonfruit	A21M00546	0.011	NTE
Ecuador	Tebuconazole	Dragonfruit	A21M00546	0.015	NTE
Ecuador	Thiabendazole	Dragonfruit	A21M00546	0.77	NTE
Ecuador	Thiabendazole	Dragonfruit	A21M00614	0.87	NTE
Ecuador	Thiabendazole	Dragonfruit	R21M00665	0.076	NTE
Greece	Boscalid	Kiwi Fruit	A21M00078	0.037	NTE
Greece	Boscalid	Kiwi Fruit	A21M00116	0.031	NTE
Greece	Boscalid	Kiwi Fruit	A21M00469	0.064	NTE
Guatemala	Captan	Peas (Seed & Pod Vegetable)	A21M00470	0.12	0.05
Guatemala	Carbendazim	Peas (Seed & Pod Vegetable)	A21M00470	0.15	NTE
Guatemala	Triadimenol	Peas (Seed & Pod Vegetable)	A21M00470	0.023	NTE
Mexico	Acephate	Beans (Green, String, Snap)	A21M00783	0.13	0.02
Mexico	Acephate	Beans (Green, String, Snap)	A21M01655	0.5	0.02



Origin	Pesticide	Commodity	Laboratory Number	Residue Amount	Tolerance
Mexico	Acephate	Beans (Green, String, Snap)	R21M00278	0.27	0.02
Mexico	Acephate	Chayote (Christophenes)	A21M00723	0.18	0.02
Mexico	Acephate	Chayote (Christophenes)	A21M00744	0.15	0.02
Mexico	Ametoctradin	Basil	A21M01271	5.5	NTE
Mexico	Ametoctradin	Mint	A21M01273	0.025	NTE
Mexico	Azoxystrobin	Litchi Nuts	R21M00664	3.4	2
Mexico	Buprofezin	Cactus Pads	A21M00100	0.033	NTE
Mexico	Captan	Beans (Green, String, Snap)	R21M01657	0.12	0.05
Mexico	Captan	Brussels Sprouts	A21M00011	0.07	0.05
Mexico	Captan	Guava	A21M00343	0.42	NTE
Mexico	Captan	Guava	A21M00598	0.86	NTE
Mexico	Captan	Onions (Green)	A21M00626	0.076	0.05
Mexico	Captan	Peppers (Chili Type)	A21M01180	0.09	0.05
Mexico	Captan	Peppers (Chili Type)	R21M00228	0.78	0.05
Mexico	Captan	Tomato	A21M00127	0.17	0.05
Mexico	Carbaryl	Peppers (Chili Type)	A21M00282	5.2	5
Mexico	Carbendazim	Basil	A21M01271	3	NTE
Mexico	Carbendazim	Beans, Asparagus (Yard Long Bean)	A21M01429	0.032	NTE
Mexico	Carbendazim	Beans, Asparagus (Yard Long Bean)	R21M01365	0.02	NTE
Mexico	Carbendazim	Bok Choy	A21M00312	0.012	NTE
Mexico	Carbendazim	Brussels Sprouts	A21M00011	0.35	NTE
Mexico	Carbendazim	Cactus Pads	A21M00100	0.14	NTE
Mexico	Carbendazim	Cactus Pads	R21M00237	0.64	NTE
Mexico	Carbendazim	Cactus Pear	A21M00461	0.033	NTE
Mexico	Carbendazim	Guava	A21M00692	0.012	NTE
Mexico	Carbendazim	Guava	R21M00540	0.016	NTE
Mexico	Carbendazim	Lime (All)	A21M00114	0.013	NTE
Mexico	Carbendazim	Lime (All)	A21M01735	0.03	NTE
Mexico	Carbendazim	Lime (All)	R21M00217	0.05	NTE
Mexico	Carbendazim	Mint	A21M01273	0.12	NTE

Origin	Pesticide	Commodity	Laboratory Number	Residue Amount	Tolerance
Mexico	Carbendazim	Papaya	A21M00155	0.053	NTE
Mexico	Carbendazim	Peppers (Chili Type)	A21M01180	0.016	NTE
Mexico	Carbendazim	Peppers (Chili Type)	R21M00228	0.17	NTE
Mexico	Carbofuran	Cactus Pads	A21M00100	0.037	NTE
Mexico	Carbofuran	Cactus Pads	A21M00202	0.027	NTE
Mexico	Carbofuran	Cactus Pads	A21M00239	0.023	NTE
Mexico	Carbofuran	Cactus Pads	R21M00237	0.16	NTE
Mexico	Carbofuran, 3-oh	Cactus Pads	R21M00237	0.12	NTE
Mexico	Chlorpropham	Beans (Green, String, Snap)	A21M01673	0.016	NTE
Mexico	Chlorpropham	Tomato	A21M00324	0.013	NTE
Mexico	Chlorpyrifos	Cactus Pads	A21M00100	0.14	NTE
Mexico	Chlorpyrifos	Cactus Pads	A21M00184	0.055	NTE
Mexico	Chlorpyrifos	Cactus Pads	A21M00239	0.17	NTE
Mexico	Chlorpyrifos	Cactus Pads	R21M00210	0.065	NTE
Mexico	Chlorpyrifos	Cactus Pads	R21M00348	0.11	NTE
Mexico	Chlorpyrifos	Cactus Pear	A21M00972	0.016	NTE
Mexico	Chlorpyrifos	Cactus Pear	A21M01057	0.046	NTE
Mexico	Chlorpyrifos	Raspberry	A21M01496	0.012	NTE
Mexico	Chlorpyrifos	Tejocote	A21M00139	0.027	NTE
Mexico	Cypermethrin	Chive	A21M01013	0.057	0.05
Mexico	Cypermethrin	Fig	A21M00589	0.063	0.05
Mexico	Diazinon	Cactus Pads	A21M00100	0.013	NTE
Mexico	Dimethoate	Cactus Pads	R21M00237	0.013	NTE
Mexico	Dimethoate	Cactus Pads	R21M00348	0.79	NTE
Mexico	Dimethoate	Cactus Pear	A21M00972	0.045	NTE
Mexico	Dimethomorph	Basil	A21M01271	2.5	NTE
Mexico	Dimethomorph	Mint	A21M01273	0.025	NTE
Mexico	Dinotefuran	Beans (Green, String, Snap)	R21M01657	0.017	0.01
Mexico	Emamectin Benzoate	Mint	A21M01273	0.013	NTE
Mexico	Famoxadone	Basil	A21M01271	3.7	NTE
Mexico	Famoxadone	Mint	A21M01273	0.048	NTE
Mexico	Fenamiphos	Peppers (Chili Type)	A21M00678	0.041	NTE

Origin	Pesticide	Commodity	Laboratory Number	Residue Amount	Tolerance
	Sulfoxide				
Mexico	Fipronil	Peppers (Chili Type)	A21M00678	0.013	NTE
Mexico	Fluopyram	Papaya	R21M00263	0.011	NTE
Mexico	Imidacloprid	Cactus Pads	R21M00134	0.099	NTE
Mexico	Lambda-cyhalothrin	Chive	A21M01013	0.021	0.01
Mexico	Lambda-cyhalothrin	Onions (Green)	A21M00349	0.021	0.01
Mexico	Lambda-cyhalothrin	Onions (Green)	A21M01062	0.043	0.01
Mexico	Malaoxon	Cactus Pear	A21M00461	0.01	NTE
Mexico	Malathion	Basil	A21M01271	0.791	NTE
Mexico	Malathion	Cactus Pads	A21M00239	0.2	NTE
Mexico	Malathion	Cactus Pads	A21M00793	0.083	NTE
Mexico	Malathion	Cactus Pads	A21M00890	0.015	NTE
Mexico	Malathion	Cactus Pear	A21M00461	0.06	NTE
Mexico	Methamidophos	Beans (Green, String, Snap)	A21M00166	0.011	NTE
Mexico	Methamidophos	Beans (Green, String, Snap)	A21M00783	0.053	NTE
Mexico	Methamidophos	Beans (Green, String, Snap)	A21M01655	0.14	NTE
Mexico	Methamidophos	Beans (Green, String, Snap)	R21M00278	0.12	NTE
Mexico	Methamidophos	Chayote (Christophenes)	A21M00723	0.032	NTE
Mexico	Methamidophos	Chayote (Christophenes)	A21M00744	0.023	NTE
Mexico	Methamidophos	Chayote (Christophenes)	R21M00194	0.038	NTE
Mexico	Methamidophos	Chayote (Christophenes)	R21M00516	0.016	NTE
Mexico	Methomyl	Cactus Pads	A21M00100	0.083	NTE
Mexico	Methomyl	Cactus Pads	A21M00202	0.065	NTE
Mexico	Methomyl	Cactus Pads	R21M00210	0.061	NTE
Mexico	Methomyl	Cactus Pads	R21M00237	0.14	NTE

Origin	Pesticide	Commodity	Laboratory Number	Residue Amount	Tolerance
Mexico	Methomyl	Guava	A21M00598	0.024	NTE
Mexico	Monocrotophos	Cactus Pads	A21M00089	0.19	NTE
Mexico	Monocrotophos	Cactus Pads	A21M00100	0.35	NTE
Mexico	Monocrotophos	Cactus Pads	A21M00210	0.01	NTE
Mexico	Monocrotophos	Cactus Pads	A21M00239	0.048	NTE
Mexico	Monocrotophos	Cactus Pads	R21M00052	0.26	NTE
Mexico	Monocrotophos	Cactus Pads	R21M00134	0.01	NTE
Mexico	Monocrotophos	Cactus Pads	R21M00210	0.079	NTE
Mexico	Monocrotophos	Cactus Pads	R21M00237	1.2	NTE
Mexico	Monocrotophos	Cactus Pads	R21M00348	0.27	NTE
Mexico	Monocrotophos	Cactus Pear	A21M00972	0.07	NTE
Mexico	Monocrotophos	Chayote (Christophenes)	A21M00037	0.055	NTE
Mexico	Monocrotophos	Chayote (Christophenes)	A21M00112	0.2	NTE
Mexico	Monocrotophos	Chayote (Christophenes)	R21M00520	0.18	NTE
Mexico	Monocrotophos	Guava	A21M00343	0.2	NTE
Mexico	Monocrotophos	Guava	A21M00598	0.26	NTE
Mexico	Monocrotophos	Peppers (Chili Type)	A21M00232	0.011	NTE
Mexico	Permethrin	Blackberry	R21M01619	0.07	NTE
Mexico	Permethrin	Bok Choy	A21M00312	0.82	NTE
Mexico	Permethrin	Cactus Pads	A21M00239	0.085	NTE
Mexico	Permethrin	Cactus Pear	A21M00461	0.071	NTE
Mexico	Permethrin	Fig	A21M00589	0.023	NTE
Mexico	Permethrin	Lime (All)	R21M00138	0.027	NTE
Mexico	Permethrin	Onions (Green)	A21M01062	0.014	NTE
Mexico	Permethrin	Peppers (Chili Type)	R21M00140	0.027	NTE
Mexico	Propamocarb	Basil	A21M01271	8.2	NTE
Mexico	Propamocarb	Onions (Green)	A21M00147	0.019	NTE
Mexico	Propamocarb	Onions (Green)	A21M00349	0.74	NTE
Mexico	Propamocarb	Onions (Green)	R21M00939	0.088	NTE
Mexico	Propamocarb	Papaya	A21M00155	0.079	NTE

Origin	Pesticide	Commodity	Laboratory Number	Residue Amount	Tolerance
Mexico	Propiconazole	Peppers (Chili Type)	R21M00224	0.095	NTE
Mexico	Thiamethoxam	Beans, Asparagus (Yard Long Bean)	A21M01586	0.057	0.02
Mexico	Thiamethoxam	Peppers (Chili Type)	A21M00572	0.5	0.25
Mexico	Thiophanate-methyl	Blackberry	R21M01509	1.2	NTE
Peru	Carbendazim	Tangerine (Mandarin, Satsuma, Etc.)	R21M01408	0.022	NTE
Peru	Chlorothalonil	Tangerine (Mandarin, Satsuma, Etc.)	R21M01408	0.12	NTE
Peru	Isoprothiolane	Tangerine (Mandarin, Satsuma, Etc.)	A21M01687	0.013	NTE
Peru	Prochloraz	Tangerine (Mandarin, Satsuma, Etc.)	A21M01622	0.022	NTE
US, Arizona	Eptc	Cauliflower	R21M00293	0.018	NTE
US, California	Acephate	Lettuce, Leaf	A21M00636	0.09	0.02
US, California	Captan	Onion (Dry Bulb)	A21M00777	0.076	0.05
US, California	Captan	Tomato	A21M00766	0.74	0.05
US, California	DCPA	Beets, Tops	R21M00074	0.012	NTE
US, California	DCPA	Malabar Spinach	A21M00983	0.022	NTE
US, California	DCPA	Spinach	R21M01283	0.034	NTE
US, California	DCPA	Swiss Chard	A21M00834	0.047	NTE
US, California	DCPA	Swiss Chard	R21M00016	0.034	NTE
US, California	Cypermethrin	Pomegranate	R21M01512	0.37	0.05
US, California	DDE	Cilantro	R21M01383	0.047	NTE
US, California	Dicloran	Kale	A21M00625	0.019	NTE
US, California	Etoxazole	Peppers (Non-chili)	R21M01428	0.22	0.2
US, California	Imazalil	Strawberry	A21M01020	0.011	NTE
US, California	Indaziflam	Tangerine (Mandarin, Etc.)	R21M00080	0.017	0.01
US, California	Lambda-cyhalothrin	Bok Choy	A21M01031	0.095	0.01
US, California	Lambda-cyhalothrin	Bok Choy	A21M01384	0.21	0.01
US, California	Linuron	Kale	A21M00894	0.01	NTE
US, California	Methamidophos	Lettuce, Leaf	A21M00636	0.013	NTE
US, California	Methomyl	Eggplant	A21M01260	0.75	0.2
US, California	Metrafenone	Lettuce, Head	A21M00600	0.017	NTE

<b>Origin</b>	<b>Pesticide</b>	<b>Commodity</b>	<b>Laboratory Number</b>	<b>Residue Amount</b>	<b>Tolerance</b>
US, California	Prometryn	Spinach	A21M00975	0.011	NTE
US, California	Propamocarb	Brussels Sprouts	R21M01282	0.025	NTE
US, California	Tetraconazole	Spinach	A21M01061	0.017	NTE
US, New Jersey	Chlorothalonil	Bok Choy	R21M01438	0.13	NTE
US, Oregon	Fipronil Sulfone	Radish	R21M00853	0.014	NTE
United States	DDE	Cilantro	R21M01148	0.031	NTE
United States	DDT	Cilantro	R21M01148	0.011	NTE
United States	Permethrin	Guava	R21M00255	0.015	NTE

Appendix 2. 2021 CPRMP sample test results by commodity type, number of illegal pesticide residues, and total number of samples collected.

Commodity	Illegal Samples	Total Collected	Percent Illegal
Aloe Vera	0	1	0%
Apple	0	31	0%
Apricot	0	15	0%
Artichoke (Globe)	0	17	0%
Asparagus	0	31	0%
Avocado	0	114	0%
Banana	0	13	0%
Basil	1	1	100%
Bean Sprouts,	0	1	0%
Bean, Broad (Fava, Horse Bean)	0	4	0%
Beans (Snap, String, Green)	6	107	6%
Beans (Wax)	0	2	0%
Beans, Asparagus (Yard Long)	3	20	15%
Beans, Succulent (Romano)	0	1	0%
Beets, Root	0	9	0%
Beets, Tops	1	4	25%
Bitter Melon	0	7	0%
Blackberry	2	57	4%
Blueberry	0	87	0%
Bok Choy	4	69	6%
Broccoli	0	43	0%
Brussels Sprouts	2	51	4%
Cabbage	0	35	0%
Cactus Pads	13	22	59%
Cactus Pear	3	5	60%
Cantaloupe	0	18	0%
Carambola (Starfruit)	0	2	0%
Carrots	0	24	0%
Cauliflower	1	41	2%
Celeriac (Celery Root)	0	1	0%
Celery	0	47	0%
Chayote (Christophenes)	7	69	10%
Cherry	0	16	0%
Chinese Amaranth (Chinese Spinach)	0	1	0%
Chinese Cabbage	0	9	0%

Commodity	Illegal Samples	Total Collected	Percent Illegal
Chinese Radish/Daikon	0	7	0%
Chive (Sibericum)	1	1	100%
Cilantro	2	7	29%
Citrus Hybrids Of Grapefruit	0	1	0%
Coconut	0	4	0%
Collards	0	2	0%
Corn, Sweet	0	14	0%
Cranberry	0	1	0%
Cucumber	0	70	0%
Currant	0	1	0%
Dandelion	0	1	0%
Date	0	4	0%
Dragonfruit	3	8	38%
Eggplant	1	49	2%
Endive (Escarole)	0	2	0%
Fennel (Sweet Or Florence)	0	28	0%
Fig	1	11	9%
Gai Lon	0	1	0%
Galangal	0	1	0%
Garbanzos (Fresh)	0	10	0%
Garlic	0	11	0%
Ginger Root	4	14	29%
Gourds	0	1	0%
Grapefruit	0	90	0%
Grapes	0	99	0%
Guava	5	25	20%
Honeydew	0	5	0%
Jicama	0	11	0%
Jujube	0	2	0%
Kale	2	53	4%
Kiwi Fruit	4	63	6%
Kohlrabi	0	4	0%
Kumquat	0	1	0%
Leek	0	2	0%
Lemon	0	45	0%
Lemongrass	0	1	0%
Lettuce, Head	1	45	2%
Lettuce, Leaf	1	65	2%



Commodity	Illegal Samples	Total Collected	Percent Illegal
Lime (All)	4	37	11%
Litchi Nuts	1	2	50%
Malabar Spinach	1	1	100%
Mamey (Mammee Apple)	0	2	0%
Mango	0	52	0%
Manioc (Cassava)	0	2	0%
Melons	0	5	0%
Mint	1	1	100%
Mushrooms	0	33	0%
Muskmelon	0	4	0%
Mustard Greens, (Leafy Vegetable)	0	3	0%
Nectarine	0	33	0%
Okra (Gumbo)	0	6	0%
Onion (Dry)	1	86	1%
Onions (Green)	5	32	16%
Orange	0	79	0%
Papaya	2	57	4%
Parsley	0	5	0%
Parsnip	0	2	0%
Peach	0	96	0%
Pear	0	71	0%
Pear, Asian	1	37	3%
Peas (All)	1	19	5%
Pepino (Melon Pear)	0	1	0%
Peppers (Chili Type)	9	73	12%
Peppers (Non-chili)	1	84	1%
Persimmon	0	4	0%
Pineapple	1	22	5%
Plantain	0	2	0%
Plum	0	42	0%
Pluot	0	3	0%
Pomegranate	1	5	20%
Pomelo	0	3	0%
Potato (White, Irish, Red, Russet)	0	49	0%
Radish	1	23	4%
Radish Tops	0	13	0%
Raspberry	1	21	5%
Rhubarb	0	3	0%

<b>Commodity</b>	<b>Illegal Samples</b>	<b>Total Collected</b>	<b>Percent Illegal</b>
Shallot, Onions (Shallot)	0	4	0%
Spearmint	0	1	0%
Spinach	3	66	5%
Squash (Summer)	0	75	0%
Squash (Winter)	0	19	0%
Strawberry	1	142	1%
Sweet Potato	0	36	0%
Swiss Chard	2	47	4%
Tangelo	0	1	0%
Tangerine (Mandarin, Satsuma, Etc.)	4	79	5%
Taro (Dasheen)	1	1	100%
Tejocote	1	1	100%
Tomatillo	0	67	0%
Tomato	3	70	4%
Turnip Greens	0	8	0%
Turnip Roots	0	26	0%
Watermelons	0	45	0%
Yam Leaves	0	1	0%
Yams, True	1	1	100%
Yautia (Malanga)	1	2	50%
Yuca (Root Crop)	0	4	0%

Appendix 3. Commodities sampled with illegal pesticide residues by origin in 2021.

Commodities with Illegal Residues	Illegal Samples	Total Collected	Percent Illegal	State or Country of Origin
Basil	1	1	100%	Mexico
Beans (Green, String, Snap)	6	107	6%	Mexico
Beans, Asparagus (Yard Long Bean)	3	20	15%	Mexico
Beet Tops	1	4	25%	California, US
Blackberry	2	57	4%	Mexico
Bok Choy	4	69	6%	California, New Jersey, US; Mexico
Brussels Sprouts	2	51	4%	California, US; Mexico
Cauliflower	1	41	2%	Arizona
Chayote, (Christophenes)	7	69	10%	Mexico
Chive	1	1	100%	Mexico
Cilantro	2	7	29%	California, US; USA
Dragonfruit	3	8	38%	Ecuador
Eggplant	1	49	2%	California, US
Fig	1	11	9%	Mexico
Ginger Root	4	14	29%	China
Guava	5	25	20%	California, US; Mexico, USA
Kale	2	53	4%	California, US
Kiwi Fruit	4	63	6%	Chile; Greece
Lettuce, Head	1	45	2%	California, US
Lettuce, Leaf	1	65	2%	California, US
Lime (All)	4	37	11%	Mexico
Litchi Nuts	1	2	50%	Mexico
Malabar Spinach	1	1	100%	California, US
Mint	1	1	100%	Mexico
Onion (Dry Bulb)	1	86	1%	California, US
Onions (Green)	5	32	16%	Mexico
Papaya	2	57	4%	Mexico
Pear, Asian	1	37	3%	China
Peas (Seed & Pod Vegetable)	1	19	5%	Guatemala
Peppers (Chili Type)	9	73	12%	Dominican Republic; Mexico
Peppers (Non-Chili)	1	84	1%	California, US
Pineapple	1	22	5%	Costa Rica
Pomegranate	1	5	20%	California, US; USA
Cactus Pear	3	5	60%	Mexico
Cactus Pads	13	22	59%	Mexico
Radish	1	23	4%	Oregon, US
Raspberry	1	21	5%	Mexico

<b>Commodities with Illegal Residues</b>	<b>Illegal Samples</b>	<b>Total Collected</b>	<b>Percent Illegal</b>	<b>State or Country of Origin</b>
Spinach	3	66	5%	California, US
Strawberry	1	142	1%	California, US
Swiss Chard	2	47	4%	California, US
Tangerine (Mandarin, Etc.)	4	79	5%	California, US; Peru
Taro (Dasheen)	1	1	100%	Costa Rica
Tejocote	1	1	100%	Mexico
Tomato	3	70	4%	California, US; Mexico
Yams, True	1	1	100%	Mexico
Yautia (Malanga)	1	2	50%	Ecuador

Appendix 4. Health concern pesticide residues detected on commodity samples.

Sample Date	Commodity	Origin	Health Concern Residues
01/05/21	Chayote	Mexico	Monocrotophos
01/19/21	Cactus Pads	Mexico	Monocrotophos
01/19/21	Cactus Pads	Mexico	Carbofuran, Chlorpyrifos, Diazinon, Methomyl, Monocrotophos
01/25/21	Chayote	Mexico	Monocrotophos
01/26/21	Tejocote	Mexico	Chlorpyrifos
02/03/21	Cactus Pads	Mexico	Chlorpyrifos
02/08/21	Cactus Pads	Mexico	Carbofuran, Methomyl
02/08/21	Cactus Pads	Mexico	Monocrotophos
02/09/21	Cactus Pads	Mexico	Carbofuran, Chlorpyrifos
03/02/21	Guava	Mexico	Captan, Monocrotophos
04/06/21	Dragonfruit	Ecuador	Acephate, Carbofuran, Dimethoate, Methamidophos, Profenofos
04/19/21	Guava	Mexico	Methomyl, Monocrotophos
05/03/21	Peppers (Chili Type)	Mexico	Chlorpyrifos, Fenamiphos Sulfoxide, Oxamyl
05/10/21	Chayote	Mexico	Acephate, Methamidophos
05/17/21	Chayote	Mexico	Acephate, Methamidophos
05/24/21	Beans (Green, String, Snap)	Mexico	Acephate, Methamidophos
07/12/21	Cactus Pear	Mexico	Chlorpyrifos, Dimethoate, Monocrotophos
07/26/21	Cactus Pear	Mexico	Chlorpyrifos
08/31/21	Eggplant	California	Methomyl
09/27/21	Pear, Asian	China	Phorate
11/15/21	Beans (Green, String, Snap)	Mexico	Acephate, Methamidophos
01/11/21	Cactus Pads	Mexico	Monocrotophos
02/08/21	Cactus Pads	Mexico	Imidacloprid, Monocrotophos
02/16/21	Chayote	Mexico	Methamidophos
02/22/21	Cactus Pads	Mexico	Chlorpyrifos, Methomyl, Monocrotophos
02/22/21	Cactus Pads	Mexico	Carbendazim, Carbofuran, Carbofuran 3-OH, Dimethoate, Methomyl, Monocrotophos
03/01/21	Beans (Green, String, Snap)	Mexico	Acephate, Methamidophos
03/15/21	Cactus Pads	Mexico	Chlorpyrifos, Dimethoate, Monocrotophos
04/19/21	Chayote	Mexico	Monocrotophos